SEQUENCE LISTING

<110> Cambridge University Technical Services

<120> A novel family of beta sub-unit proteins from a voltage gated sodium channel nucleic acids encoding them and therapeutic or diagnostic uses thereof

<130> 674558-2001

<140> 09/997,579
<141> 2001-10-15

<150> PCT/EP00/01783
<151> 2000-02-24

<150> 60,129,473
<151> 2000-02-24

<160> 49

<170> PatentIn version 3.2

<210> 1
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1 5 10 15

Tyr Trp Val Arg Val Cys Phe Pro Val Cys Val Glu Val Pro Ser Glu
20 25 30

Thr Glu Ala Val Gln Gly Asn Pro Met Lys Leu Arg Cys Ile Ser Cys
35 40 45

Met Lys Arg Glu Glu Val Glu Ala Thr Thr Val Val Glu Trp Phe Tyr
50 55 60

Arg Pro Glu Gly Gly Lys Asp Phe Leu Ile Tyr Glu Tyr Arg Asn Gly
65 70 75 80

His Gln Glu Val Glu Ser Pro Phe Gln Gly Arg Leu Gln Trp Asn Gly
85 90 95

Ser Lys Asp Leu Gln Asp Val Ser Ile Thr Val Leu Asn Val Thr Leu
100 105 110

Asn Asp Ser Gly Leu Tyr Thr Cys Asn Val Ser Arg Glu Phe Glu Phe
115 120 125

Glu Ala His Arg Pro Phe Val Lys Thr Thr Arg Leu Ile Pro Leu Arg
130 135 140

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Val Thr Glu Glu Ala Gly Glu Asp Phe Thr Ser Val Val Ser Glu Ile
145                 150                 155                 160

Met Met Tyr Ile Leu Leu Val Phe Leu Thr Leu Trp Leu Phe Ile Glu
                165                 170                 175

Met Ile Tyr Cys Tyr Arg Lys Val Ser Lys Ala Glu Glu Ala Ala Gln
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Glu Asn Ala Ser Asp Tyr Leu Ala Ile Pro Ser Glu Asn Lys Glu Asn
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Ser Val Val Pro Val Glu Glu
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Met Pro Ala Phe Asn Arg Leu Phe Pro Leu Ala Ser Leu Val Leu Ile
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Tyr Trp Val Ser Val Cys Phe Pro Val Cys Val Glu Val Pro Ser Glu
            20                  25                  30

Thr Glu Ala Val Gln Gly Asn Pro Met Lys Leu Arg Cys Ile Ser Cys
        35                  40                  45

Met Lys Arg Glu Glu Val Glu Ala Thr Thr Val Val Glu Trp Phe Tyr
    50                  55                  60

Arg Pro Glu Gly Gly Lys Asp Phe Leu Ile Tyr Glu Tyr Arg Asn Gly
65                  70                  75                  80

His Gln Glu Val Glu Ser Pro Phe Gln Gly Arg Leu Gln Trp Asn Gly
                85                  90                  95

Ser Lys Asp Leu Gln Asp Val Ser Ile Thr Val Leu Asn Val Thr Leu
            100                 105                 110

Asn Asp Ser Gly Leu Tyr Thr Cys Asn Val Ser Arg Glu Phe Glu Phe
        115                 120                 125

Glu Ala His Arg Pro Phe Val Lys Thr Thr Arg Leu Ile Pro Leu Arg
    130                 135                 140

Val Thr Glu Glu Ala Gly Glu Asp Phe Thr Ser Val Val Ser Glu Ile
145                 150                 155                 160

Met Met Tyr Ile Leu Leu Val Phe Leu Thr Leu Trp Leu Leu Ile Glu
                165                 170                 175

Met Ile Tyr Cys Tyr Arg Lys Val Ser Lys Ala Glu Glu Ala Ala Gln
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Glu Asn Ala Ser Asp Tyr Leu Ala Ile Pro Ser Glu Asn Lys Glu Asn
        195                 200                 205

Ser Ala Val Pro Val Glu Glu
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<211> 24
<212> PRT
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<400> 6

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<210> 7
<211> 19

<212> PRT
<213> homo sapiens

<400> 7

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Tyr Trp Val

<210> 8
<211> 19
<212> PRT
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<400> 8

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<212> PRT
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<210> 10
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<400> 10

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1 5 10

<210> 11
<211> 15
<212> PRT
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<210> 12
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<400> 12

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<400> 14

Arg Val Cys Phe Pro
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<210> 15
<211> 11
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<213> Homo sapiens

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Val Leu Ile Tyr Trp Val Ser Val Cys Phe Pro
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<210> 16
<211> 11
<212> PRT
<213> rat

<400> 16

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<210> 17
<211> 39
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<213> homo sapiens

<400> 17

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<212> PRT
<213> rat

<400> 18

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20 25 30

Thr Glu Ala Val Gln Gly Asn
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<210> 19
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<213> Homo sapiens

<400> 19

Cys Val Glu Val Pro Ser Glu Thr Glu
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<210> 20
<211> 17
<212> PRT
<213> Homo sapiens

<400> 20

Trp Val Ser Val Cys Phe Pro Val Cys Val Glu Val Pro Ser Glu Thr
1 5 10 15

Glu

<210> 21
<211> 17
<212> PRT
<213> Rat

<400> 21

Trp Val Arg Val Cys Phe Pro Val Cys Val Glu Val Pro Ser Glu Thr
1 5 10 15

Glu

<210> 22
<211> 159
<212> PRT
<213> Homo sapiens

<400> 22

Met Pro Ala Phe Asn Arg Leu Phe Pro Leu Ala Ser Leu Val Leu Ile
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20 25 30

Thr Glu Ala Val Gln Gly Asn Pro Met Lys Leu Arg Cys Ile Ser Cys
35 40 45

Met Lys Arg Glu Glu Val Glu Ala Thr Thr Val Val Glu Trp Phe Tyr
50 55 60

Arg Pro Glu Gly Gly Lys Asp Phe Leu Ile Tyr Glu Tyr Arg Asn Gly
65 70 75 80

His Gln Glu Val Glu Ser Pro Phe Gln Gly Arg Leu Gln Trp Asn Gly
85 90 95

Ser Lys Asp Leu Gln Asp Val Ser Ile Thr Val Leu Asn Val Thr Leu
100 105 110

Asn Asp Ser Gly Leu Tyr Thr Cys Asn Val Ser Arg Glu Phe Glu Phe
115 120 125

Glu Ala His Arg Pro Phe Val Lys Thr Thr Arg Leu Ile Pro Leu Arg
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<210> 23

<211> 159
<212> PRT
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<400> 23

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20 25 30

Thr Glu Ala Val Gln Gly Asn Pro Met Lys Leu Arg Cys Ile Ser Cys
35 40 45

Met Lys Arg Glu Glu Val Glu Ala Thr Thr Val Val Glu Trp Phe Tyr
50 55 60

Arg Pro Glu Gly Gly Lys Asp Phe Leu Ile Tyr Glu Tyr Arg Asn Gly
65 70 75 80

His Gln Glu Val Glu Ser Pro Phe Gln Gly Arg Leu Gln Trp Asn Gly
85 90 95

Ser Lys Asp Leu Gln Asp Val Ser Ile Thr Val Leu Asn Val Thr Leu
100 105 110

Asn Asp Ser Gly Leu Tyr Thr Cys Asn Val Ser Arg Glu Phe Glu Phe
115 120 125

Glu Ala His Arg Pro Phe Val Lys Thr Thr Arg Leu Ile Pro Leu Arg
130 135 140

Val Thr Glu Glu Ala Gly Glu Asp Phe Thr Ser Val Val Ser Glu
145 150 155

<210> 24
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<210> 25
<211> 13
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<400> 25

Cys Met Lys Arg Glu Glu Val Glu Ala Thr Thr Val Val
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<211> 10
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Tyr Glu Tyr Arg Asn Gly His Gln Glu Val
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Trp Asn Gly Ser Lys Asp Leu Gln Asp Val Ser Ile
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<210> 28
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Val Glu Ser Pro Phe Gln Gly Arg Leu
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<210> 30
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<212> PRT
<213> Homo sapiens

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1 5 10

<210> 31
<211> 34
<212> PRT
<213> Homo sapiens

<400> 31

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Glu Glu

<210> 32
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<212> PRT
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<400> 32

Asp Tyr Leu Ala Ile Pro Ser
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<223> primer used to amplify nucleic acid sequences encoding b3 subunit nucleic acid of rat or human

<400> 33
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<210> 34
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<220>
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<400> 34
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<210> 35
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<223> antisense radiolabelled oligonucleotide probe used in the in situ hybridization experiments

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<210> 36
<211> 18
<212> DNA
<213> Artificial sequence

<220>
<223> primer used to amplify nucleic acid encoding a b3 sub-unit from a voltage-gated sodium channel

<400> 36
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<210> 37
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<220>
<223> reverse primer (nucleotides 1317-1300) corresponding to unique sequence in the 3' untranslated region of each b subunit

<400> 37
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<210> 38
<211> 20
<212> DNA
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<220>
<223> forward primer (nucleotides 1942-1961) corresponding to unique sequence in the 3' untranslated region of each b subunit

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<210> 39
<211> 20
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<220>
<223> reverse primer (nucleotides 2209-2190) corresponding to unique sequence in the 3' untranslated region of each b subunit

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<210> 40
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<220>
<223> a-tubulin forward primer (nucleotides 298-316) corresponding to unique sequence in the 3' untranslated region of each b subunit

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<210> 41
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<220>
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<220>
<223> rat b1 (nucleotides 1296-1252) primer used in immobilization of nucleic acid probe on a substrate

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<210> 43
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<212> DNA
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<220>
<223> rat a IIA (nucleotides 1659-1615) primer used in immobilization of nucleic acid probe on a substrate

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<210> 44
<211> 218
<212> PRT
<213> Rat

<400> 44

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Met Gly Thr Leu Leu Ala Leu Val Val Gly Ala Val Leu Val Ser Ser
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            20                  25                  30

Gly Met Thr Phe Lys Ile Leu Cys Ile Ser Cys Lys Arg Arg Ser Glu
        35                  40                  45

Thr Thr Ala Glu Thr Phe Thr Glu Trp Thr Phe Arg Gln Lys Gly Thr
    50                  55                  60

Glu Glu Phe Val Lys Ile Leu Arg Tyr Glu Asn Glu Val Leu Gln Leu
65                  70                  75                  80

Glu Glu Asp Glu Arg Phe Glu Gly Arg Val Val Trp Asn Gly Ser Arg
                85                  90                  95

Gly Thr Lys Asp Leu Gln Asp Leu Ser Ile Phe Ile Thr Asn Val Thr
            100                 105                 110

Tyr Asn His Ser Gly Asp Tyr Glu Cys His Val Tyr Arg Leu Leu Phe
        115                 120                 125

Phe Asp Asn Tyr Glu His Asn Thr Ser Val Val Lys Lys Ile His Leu
    130                 135                 140

Glu Val Val Asp Lys Ala Asn Arg Asp Met Ala Ser Ile Val Ser Glu
145                 150                 155                 160

Ile Met Met Tyr Val Leu Ile Val Val Leu Thr Ile Trp Leu Val Ala
                165                 170                 175

Glu Met Val Tyr Cys Tyr Lys Lys Ile Ala Ala Ala Thr Glu Ala Ala
            180                 185                 190

Ala Gln Glu Asn Ala Ser Glu Tyr Leu Ala Ile Thr Ser Glu Ser Lys
        195                 200                 205

Glu Asn Cys Thr Gly Val Gln Val Ala Glu
    210                 215
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<210> 45
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<213> Rat

<400> 45

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            20                  25                  30

Ile Ser Phe Thr Trp Arg Tyr Gln Pro Glu Gly Gly Arg Asp Ala Ile
        35                  40                  45

Ser Ile Phe His Tyr Ala Lys Gly Gln Pro Tyr Ile Asp Glu Val Gly
    50                  55                  60

Thr Phe Lys Glu Arg Ile Gln Trp Val Gly Asp Pro Ser Trp Lys Asp
65                  70                  75                  80

Gly Ser Ile Val Ile His Asn Leu Asp Tyr Ser Asp Asn Gly Thr Phe
                85                  90                  95

Thr Cys Asp Val Lys Asn Pro Pro Asp Ile Val Gly Lys Thr Ser Gln
            100                 105                 110

Val Thr Leu Tyr Val Phe Glu
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<211> 8
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<213> Homo sapiens

<400> 46

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<210> 47
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<212> PRT
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<400> 47

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Tyr Leu Ala Ile Pro Ser Glu Asn Lys Glu Asn Ser Val Val Pro Val
            20                  25                  30

Glu Glu
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<211> 265
<212> DNA
<213> Rattus norvegicus

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<210> 49
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<212> DNA
<213> homo sapiens

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<221> misc_feature
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<223> n is a, c, g, or t

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ggagacggag ccgtgcangg caaccccatg aagctgcgct gcatctcctg catgaagaga 180

gaggaggtgg aggccaccac ggtggtggaa tggttctaca ggcccgaggg cggtaaagat 240

ttccttattt acgagtatcg gaatggccac caggaggtgg agagcccctt tcaggggcgc 300

ctgcagtgga atggcagcaa ggacctgcag gacgtgtcca tcactgtgct caacgtcact 360

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